# DINAMAP ProCare

## Vital Signs Monitor


More than 3 million times every single day critical patient care decisions are made based on blood pressure determinations taken using DINAMAP® technology. Now this technology is available in a durable, easy-to-use unit that fits even the most sensitive of budgets.

With the DINAMAP ProCare Series, you can take BP measurements that are fast, accurate and comfortable. Get reliable temperature readings in seconds. And get oxygen saturation readings with your choice of leading $SpO_2$ technologies. Which means you spend less time checking vitals and more time on actual patient care.

### Mechanical Specifications

- Mountings: Self-supporting on rubber feet
- Portability: Carried by handle
- Mode of operation: Continuous
- Degree of protection against harmful ingress of water: Drip-proof IPX1
- Universal Power Converter: P/N: 2013057-001
- Protection against electrical shock: Class II
- AC input: 100-240 VAC 50/60 Hz, 36 W
- DC output voltage: 12VDC at 1A

The AC mains power adapter contains a nonresettable and non-replaceable fuse.

- Protection against electrical shock: Internally powered or Class II when powered by specified external power supply.
- DC input voltage: 12 VDC, supplied from a source conforming to IEC 601-1.
- Fuses: The monitor contains four fuses.

The fuses are auto-resettable and mounted within the monitor.

The fuses protect the low-voltage DC input, the battery, the remote alarm output, and the +5 V output on the host port connector.

- Battery: 6 volt, 3.3 amp-hours sealed lead acid.
- Minimum operation time: 5 hrs (5-min cycle with adult cuff at 25˚C, $SpO_2$ active at 60 bpm, Temp in monitor mode) from full charge. Time for full recharge: Approx: 2 hrs from full discharge when the monitor is switched off and approx. 5 hrs when the monitor is switched on.
- Radio Frequency: Complies with IEC Publication 601-1-2 (April 1993) Medical Electrical Equipment, Electromagnetic Compatibility Requirements and Tests and CISPR 11 (Group 1, Class B) for radiated and conducted emissions.
- IPX1

The DINAMAP ProCare monitor is protected against vertically falling drops of water and conforms with the IEC 529 standard at level of IPX1. No harmful effects will come of vertically falling drops of water making contact with the monitor.

imagination at work

## Performance Specifications

### *NIBP*

- Cuff Pressure Range: (Normal operating range)
  0 to 290 mmHg (adult)
  0 to 140 mmHg (neonate)
- Default Target: Cuff Inflation
  160 ± 15 mmHg (adult)
  110 ± 15 mmHg (neonate)
- Target Cuff Inflation: 100 to 250 mmHg (adult)
- Adjustment Range: 100 to 140 mmHg (neonate), (in 5 mmHg increments)

### *Blood Pressure Measurement*

- Systolic Range: 30 to 245 mmHg (adult/ped), 20 to 115 mmHg (neonate)
- MAP Range: 15 to 215 mmHg (adult/ped), 20 to 100 mmHg (neonate)
- Diastolic Range: 10 to 195 mmHg (adult/ped), 40 to 140 mmHg (neonate)
- Accuracy: Meets AAMI/ANSI standard SP10 (mean error 5 mmHg, standard deviation 8 mmHg)
- Maximum Determination Time:
  120s (adult/ped), 85s (neonate)
- Overpressure Cutoff: 300-330 mmHg (adult/ped), 150-165 mmHg (neonate)
- Pulse Rate Range: 30 to 200 beats/min (adult/ped), 30 to 220 beats/min (neonate)
- Pulse Rate Accuracy: ±3.5%

### *Turbo•Temp Temperature*

- Scale: °Fahrenheit (F), °Celsius (C)
- Predictive Mode Range:
  96.0° F (35.6° C) to 106.0° F (41.1° C)
- Monitor Mode Range:
  80.0° F (26.7° C) to 110.0° F (43.3° C)

### *Accuracy*

- ±0.2° F (±0.1° C) (when tested in a calibrated liquid bath; meets ASTM E1112, Table 1, in range specified)
- Determination Time: approx. 10 seconds, typical

Use only IVAC probes and P850A probe covers. The size, shape, and thermal characteristics of the probe covers can affect the performance of the instrument. Inaccurate readings or retention problems may occur unless IVAC probes and probe covers are used.

### *Nellcor® $SpO_2$*

- Measurement Range:
  $SpO_2$: 1 to 100%
  Pulse Rate: 20 to 250 beats/min
- Saturation without motion:
  Adults*: 70 to 100% ±2 digits
  Neonate*: 70 to 100% ±3 digits
- Saturation with Motion - Adults/Neo**:
  70 to 100% ±3 digits
- Low Perfusion: 70 to 100% ±2 digits,
  0 to 69% unspecified
- Pulse Rate:
  Without Motion: 20 to 250 beats/min ±3 digits

  With Motion: normal physiologic range 55 to 125 beats/min ±5 digits

  Low Perfusion 20 to 250 beats/min ±3 digits

*Adult specifications are shown for OXIMAX MAX-A and MAX-N sensors. Neonate specifications are shown for OXIMAX MAX-N. Saturation accuracy will vary by sensor type.

**Applicability: OXIMAX MAX-A, MAX-AL, MAX-P, MAX-I and MAX-N sensors.

| Operating Conditions | Storage Conditions |
|---|---|
| Temperature: +5˚C to +40˚C (+41˚F to +104˚F) | Temperature: -20˚C to +50˚C (-4˚F to +122˚F) |
| Atmospheric Pressure: 700 hPa to 1060 hPa | Atmospheric Pressure: 500 hPa to 1060 hPa |
| | Humidity Range: 5% to 95% noncondensing |

| Dimensions | | | |
|---|---|---|---|
| Height: 24.7 cm (9.7 in) | Depth: 13.5 cm (5.3 in) | Width: 21.9 cm (8.6 in) | Weight: 5.68 lb (2.58 Kg) |

Weight includes battery

- Default Settings
  $SpO_2$ (%): High: 100
  $SpO_2$ (%): Low: 90
  Response Mode: Fast

Sat Seconds: OFF

- Sensor Light Source Wavelength:
  Infrared: 890 nm (nominal)
  Red: 660 nm (nominal)
- Power Dissipation:
  Infrared: 22.5 mW (max)
  Red: 30 mW (max)

***Masimo SET® $SpO_2$***

- $SpO_2$ Range: 1 to 100%
- Pulse Rate: 25 to 240 beats/min
- Perfusion Range: 0.02 to 20%
- Saturation without Motion:
  Adult/Ped* 70 to 100% ±2 digits
  Neonate* 70 to 100% ±3 digits
- Saturation with Motion:
  Adult/Ped/Neo**† 70 to 100% ±3 digits
  Low Perfusion§ 70 to 100% ±2 digits
  0 to 69% unspecified
- Pulse Rate without Motion:
  25 to 240 beats/min ±3 digits,
- Pulse Rate with Motion:
  Normal physiologic range 25 to 240 beats/min ±5 digits

***Masimo Sensor Accuracy***

Sensor Model $SpO_2$ Range 70% – 100% LNOP

| | |
|---|---|
| LNOP-ADT | ±2 digits |
| LNOP-ADT Long | ±2 digits |
| LNOP-PDT | ±2 digits |
| LNOP-NEO | ±3 digits |
| LNOP-NEO PT | ±3 digits |
| LNOP-DCI (reusable) | ±2 digits |
| LNOP-DCSC (reusable) | ±2 digits |
| LNOP-DCIP (reusable) | ±2 digits |
| DC 195 | ±2 digits |

- Resolution: Saturation (% $SpO_2$): 1%,
  Pulse Rate (bpm): 1
- Low Perfusion Performance:
  >0.02% Pulse Amplitude Saturation (%$SpO_2$) ±2 digits and % Transmission >5% Pulse Rate ±3 digits
- Interfering Substances: Carboxyhemoglobin may erroneously increase readings. The level of increase is approximately equal to the amount of carboxyhemoglobin present. Dyes, or any substance containing dyes, that change usual arterial pigmentation may cause erroneous readings.
- Sensor Light Source Wavelength: Infrared: 905 nm (nominal), Red: 660 nm (nominal)
- Power Dissipation: Infrared: 22.5 mW (max), Red: 27.5 mW (max)
- Default Settings:
  $SpO_2$ (%): High: 100, Low: 90
  Sensitivity Mode: Normal
  Averaging Time: 12 seconds
  FastSAT Mode: 0 (for Off)

*The Masimo SET® $SpO_2$ parameter with LNOP-Adt sensors has been validated for no motion accuracy in human blood studies on healthy adult volunteers in induced hypoxia studies in the range of 70-100% $SpO_2$ against a laboratory co-oximeter and ECG monitor. This variation equals plus or minus one standard deviation. Plus or minus one standard deviation encompasses 68% of the population.

**The Masimo SET® $SpO_2$ parameter with LNOP-Adt sensors has been validated for motion accuracy in human blood studies on healthy adult volunteers in induced hypoxia studies while performing rubbing and tapping motions at 2 to 4 Hz at an amplitude of 1 to 2 cm and a non-repetitive motion between 1 to 5 Hz at an amplitude of 2 to 3 cm in induced hypoxia studies in the range of 70-100% $SpO_2$ against a laboratory co-oximeter and ECG monitor. This variation equals plus or minus one standard deviation. Plus or minus one standard deviation encompasses 68% of the population.

†The Masimo SET® $SpO_2$ parameter with LNOP-Neo Pt sensors has been validated for neonatal motion accuracy in human blood studies on neonates while moving the neonate's foot at 2 to 4 cm against a laboratory co-oximeter and ECG monitor. This validation equals plus or minus one standard deviation. Plus or minus one standard deviation encompasses 68% of the population.

§The Masimo SET® $SpO_2$ parameter has been validated for low perfusion accuracy in bench-top testing against a Biotek Index 2 simulator and Masimo's simulator with signal strengths of greater than 0.02% and a % transmission of greater than 5% for saturations ranging from 70 to 100%. This variation equals plus or minus one standard deviation. Plus or minus one standard deviation encompasses 68% of the population.

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